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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,212	07/16/2001	Ryuichi Ugajin	9794353-014	6085

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EXAMINER

BOOKER, KELVIN E

ART UNIT PAPER NUMBER

2121

DATE MAILED: 12/19/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/787,212

Applicant(s)

UGAJIN ET AL.

Examiner

Kelvin E Booker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: *Detailed Office Action*.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claims 1-11** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

Further, the term "substantially" in **claims 4-7, 10 and 11** is a relative term that renders the claim indefinite. The term "substantially parametrically" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

In addition, **Claim one** provides for the use of "*a method for fabricating a fractal structure*", but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it

merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. **Claims 1-11** are rejected under 35 U.S.C. 101 because the invention as disclosed in **claim one** is directed to non-statutory subject matter. While the claim is in the technological arts, it is not limited to practical applications in the technological arts.

Specifically, the claims address a series of steps to be performed on a computer, but the idea is disclosed abstractly from any particular practical application. **Claim one** focuses on “*a method for fabricating a fractal structure*”, but fails to provide the necessary steps to enable the claimed process.

To constitutionally interpret the word “process”, the Supreme Court has held that: “***A process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject matter to be transformed and reduced to a different state or thing. ***The Process requires that certain things should be done with certain substances, and in a certain order; but the tools to be used in doing this may be a secondary consequence.”(emphasis added) *Diamond, Commission of Patents and Trademarks v. Diehr and Lutton*, 209 USPQ 1, 6 (1981) quoting *Cochrane v. Deener*, 94 U.S. 780, 787-788 (1876).

This Constitutional interpretation of the word “process” is a long-standing one that the Supreme Court requires to be applied in interpreting 35 USC 101. *Diamond v. Diehr* at 6. Consequently, the use of that interpretation is Constitutionally required when we interpret the Federal Circuit’s standard that a “new and useful process” is one that produces a useful, concrete, and tangible result”. Cf. *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 47 USPQ2d 1596, 1600-1601 (Fed. Cir. 1998).

Applicant discloses no “certain substances” that have been “transformed or reduced” in that applicant’s claims disclose no specific computer-readable medium, no manipulation of specific data representing physical objects or activities (pre-computer activity), nor do they disclose any specific independent physical acts being performed by the invention (post-computer activity). The claims merely manipulate abstract ideas in general without limitation to a practical application where “certain substances” are transformed or reduced.

Claims 2-11 do not cure the defect in the claim one. On this basis, **claims 1-11** are rejected under 35 USC 101.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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7. **Claims 1-3** are rejected under 35 U.S.C. 102(b) as being anticipated by Kotsavasiloglou et al., "Model for a Neural Network Structure and Signal Transmission" [hereafter Kotsavasiloglou].

As per claim 1, Kotsavasiloglou teaches of a method for fabricating a fractal structure characterized in growing fractal structures from a plurality of start sites, respectively, while having said fractal structures interact with each other, to form fractal structures coupled to each other (see page 4491, column 2, paragraph 2: "In the present model...resembling a real neuron").

As per claim 2, Kotsavasiloglou teaches of a method for fabricating a fractal structure wherein growth rate from a specific start site among said plurality of start sites is determined by the probability that a material reaches a portion already grown from a remote site in a diffusion process, and the probability that a growth promotion factor reaches the portion already grown from portions grown from the other start sites in a diffusion process (see figures 1 and 2; and page 4490, column 2, paragraph 3 through page 4491, column 1, paragraph 2).

As per claim 3, Kotsavasiloglou teaches of a 3 method for fabricating a fractal structure wherein said growth rate is proportional to the product of a power function of the probability that a material reaches a portion. already grown from a remote site in a diffusion process, and a power function of the probability that a growth promotion factor reaches the portion already grown from portions crown from the other start sites in a diffusion process (see page 4490, column 2, paragraph 3 through page 4491, column 1, paragraph 2; and page 4491, column 2, paragraphs 2 and 3: "A number of neurons...continue on the other side").

Conclusion

8. The following is prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- A. Arnoux et al., U.S. Patent No. 6,553,355;
- B. Zaroubi et al., U.S. Patent No. 6,094,050;
- C. Tucker et al., U.S. Patent No. 5,612,700;
- D. Tucker et al., U.S. Patent No. 5,504,487;
- E. Bieberich, "Structure in Human Consciousness: A Fractal Approach to the Topology of the Self Perceiving and Outer World in an Inner Space";
- F. Gaussier et al., "Navigating with an Animal Brain: A Neural Network For Landmark Identification and Navigation";
- G. Bressloff et al., "Analysis of Associative Reinforcement Learning in Neural Networks Using Iterated Function Systems";
- H. Chakraborty et al., "Fractal Connection Structure: Effect on Generalization in Supervised Feed-Forward Networks";
- I. Zou et al., "A Chaotic Attractor with Cellular Neural Networks";
- J. Lister, "Annealing Networks and Fractal Landscapes"; and
- K. Indjic, "Reduction in Power System Load Data Training Sets Size Using Fractal Approximation Theory".

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9. An inquiry concerning this communication or earlier communications from the examiner should be directed to Kelvin Booker whose telephone number is (703) 308-4088. The examiner can normally be reached on Monday-Friday from 7:00 AM-5:30 PM EST.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anil Khatri, can be reached on (703) 305-0282. The fax number for the organization where this application or proceeding is assigned is (703) 872-9306.

An inquiry of a general nature or relating to the status of this application proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

K.E.B.

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December 10, 2003



ANIL KHATRI
SUPERVISORY PATENT EXAMINER